

Notice of Allowability

Application No.

09/883,710

Examiner

Trent J Roche

Applicant(s)

RAMASAMY ET AL.

Art Unit

2124

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to communications filed 18 June 2001.
2. ☒ The allowed claim(s) is/are 1-14.
3. ☒ The drawings filed on 18 June 2001 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

DETAILED ACTION

1. This office action is responsive to communications filed 18 June 2001.
2. Claims 1-14 have been examined.

Allowable Subject Matter and Examiner's Statement of Reason(s) for Allowance

3. Claims 1-14 are allowed.
4. The following is an examiner's statement of reasons for allowance:

The prior art of record, specifically Graham et al and Shaughnessy, taken alone or in combination, fail to teach or suggest a method and apparatus for generating edge profile data in such a manner as recited in independent claims 1, 7, 8 and 14. Found prior art, specifically *gprof: a Call Graph Execution Profiler* to Graham et al and U.S. Patent 6,026,235 to Shaughnessy, fail to teach or suggest generating edges that represent respective branch instructions ... each edge having associated therewith a source attribute, a target attribute, and an edge-taken attribute; identifying entry point addresses and target addresses of stub code segments; and *for any edge having an edge target attribute that matches an entry point address of a stub code segment, changing the edge target attribute to the stub target address associated with the matching entry point address.* (claim 1). Similar features are also claimed in independent claims 7, 8 and 14.

Instead, Graham et al disclose the ability to monitor the execution of a program and record various aspects of the profiled routines. Specifically, Graham et al provide the ability to count the number of times an arc between routines is encountered, and identifies the source and destination of arcs, designated as the "caller" and "callee," respectively. Further, Graham records all arcs discovered, along with a count indicating the number of times the arc was traversed during

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execution. As such, Graham et al disclose creating edges that represent respective branch instructions in the executable program code, each edge having associated therewith a source attribute, a target attribute, and an edge-taken attribute; counting number of times the branch instructions are executed and assigning values of the numbers to the edge-taken count attributes of the edges; and identifying entry point addresses and target addresses in the executable program code. However, Graham et al do not disclose that the entry point addresses and target addresses are specifically for stub code segments, nor the ability *for any edge having an edge target attribute that matches an entry point address of a stub code segment, changing the edge target attribute to the stub target address associated with the matching entry point address.*

Shaughnessy discloses the ability to build a stub table that has a stub for each function, wherein the stubs serve as a destination for invoked functions in the executable. Specifically, all references to a particular function are modified to call the stub instead of directly calling the associated function. The stub, in turn, calls an entry point for a monitoring tool, and then jumps to the associated function designated to be monitored. As such, Shaughnessy discloses the ability to determine whether an edge target is a function, and redirecting the edge target to a entry point for a stub code segment, but not specifically the ability *for any edge having an edge target attribute that matches an entry point address of a stub code segment, changing the edge target attribute to the stub target address associated with the matching entry point address.*

5. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

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6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Trent J Roche whose telephone number is (703)305-4627. The examiner can normally be reached on Monday - Friday, 9:00 am - 6:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kakali Chaki can be reached on (703)305-9662. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Trent J Roche
Examiner
Art Unit 2124

TJR

Kakali Chaki

**KAKALI CHAKI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100**